INFORMATION

ALLEY

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About the *Information Alley*

The *Information Alley* ™ is a publication of Apple Computer, Inc., Support Information Services. The goal of the *Information Alley* is to help you get full use of your Apple computers, peripherals, and software. We make every attempt to include articles that have the broadest audience possible. However, we do sometimes print articles that do not apply to our international readers.

Where to Find the *Information Alley*

The *Information Alley* is available through a variety of online services and Internet list server capability.

For a complete list of where to find the *Information Alley*, call the Apple Fax line at 1-800-505-0171 and request document #20720. You can also get an index to back issues by requesting document #20719.

Optionally, you can search the Technical Information Library; use "information alley" as the search string. Available articles are:

- *Information Alley: Online Services it is Posted To*
- *Information Alley: Index of Vol I Issues*
- *Information Alley: Index of Vol II Issues*

Information Alley Formats

The *Information Alley* is available in these formats:

Adobe Acrobat

Requires the Macintosh, DOS, Windows, or UNIX Acrobat Reader. The free Readers are available via the Adobe BBS (206) 623-6984, America Online, Compuserve, or the World Wide Web at this URL: **http://www.adobe.com/**.

Common Ground

Includes the imbedded Common Ground Macintosh MiniViewer. This format requires no external reader.

SeText

Includes no graphics or special magazine formatting. Formatted to be read with EasyView or any word processor.

Submissions and Letters

We welcome articles of general interest to Apple computer users, letters to the editor, and suggestions for future articles. Send submissions to:

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The Information Alley is produced using FrameMaker 4.0 on a Power Macintosh running System 7.5.

Font Problem Found and Fixed

By Janet Christian

We heard from several customers who experienced problems printing the Adobe Acrobat version of the *Information Alley*. After considerable checking, we discovered a font problem on my system. We believe we have corrected this problem and hope that none of you experience any more printing difficulties. Please let us know if you do.

It is a challenge to produce a magazine that must be readable on an infinite number of system configurations. We always welcome your feedback and suggestions – both good and bad.

Adobe Acrobat Hypertext Links

Speaking of Adobe Acrobat...

We received a suggestion that we include hypertext links in our Adobe Acrobat version. Well, we already do. Since knowledge of this may not be as widespread as we thought, here is a quick description:

• Click on any entry in the **Contents** list to go directly to the applicable page.

• Click on the **Continued on next page**/**Continued from previous page** notes to switch between the two pages.

• Click on any Apple logo at the end of an article to return to the title page (back to the **Contents**).

• Click on an entry in either the Acrobat **Bookmarks** or **Thumbnails** special menus to go to the appropriate location in the magazine.

We hope this clarifies the features available in the Acrobat version of the *Information Alley*.

Master Indexes Available

We received a request to maintain master indexes of the *Information Alley* back issues. We have a complete Volume I index (titled either *Info Alley Vol 1 Index 5/95* or *InfoAlley.V1.Index 5/95*) available on our online services; we upload an updated Volume II index (*InfoAlley.V2.Index m/95*, where *m* is the current month) every two weeks.

If you do not find these files on your preferred bulletin board or online service, please ask the service administrator to download them, or access one of the online services where we directly post each issue (eWorld, AppleLink, CompuServe, Internet—including World Wide Web, and America Online).

Apple Software Updates Information Available via email

By Charlie McCabe

You can obtain the latest information on where to find Apple Software Updates via automated email. Here are the documents we currently have available, where to send the email message, and what to type.

Note that you specify the keyword for the information you want in the subject line of the email, not in the body of the message. The information you type as body text is unimportant. The mail server only reviews the subject line to determine what to send.

Mailing List	email Address	Specify this Subject
Where to find Apple Software Updates	info@thing2.info.apple.com	swwhere
What's New on Apple Software Updates (current listing, by date, of recently posted software)	info@thing2.info.apple.com	swnew
Apple Software Updates – Alphabetical List	info@thing2.info.apple.com	swalpha
Apple Software Updates – Structure List	info@thing2.info.apple.com	swstructure
Current list of all Apple Mailing Lists	info@thing2.info.apple.com	listinfo

The information you requested is sent by reply mail as soon as possible.

New Color StyleWriter Pro Black Ink Cartridge

By Joe Wilson

If you have a Color StyleWriter Pro and you need to order a replacement Black Ink Cartridge (M1952G/A), there is a new version available. The original Black Ink Cartridge (as specified in the printer's user's guide) was discontinued by Apple so that an improved version with an extended life could be introduced. The new ink cartridge is called the Color StyleWriter Pro Black High Capacity Ink Tank, and it can be ordered using finished goods model number M3822G/A.

The Black High Capacity Ink Tank is slightly larger in size, which nearly doubles the ink carrying capacity for the black ink. The new ink tank design uses extra space next to the black ink tank to allow for the larger ink tank.

Power Macintosh 9500 –
Video Blinking at Startup

By Brian Fant

If you have a Power Macintosh 9500 series computer you may notice that the screen blinks off and on for a second during the startup process.

The video 'blinking' or 'blanking' is normal behavior for the Power Macintosh 9500 series computer's video card and does not signify a hardware problem.

The reason that the video goes black for a short time at startup is that the video card initially uses the driver contained on the ROM of the video card. Early in the startup process, a newer video driver contained in the Graphic Accelerator extension is swapped in. It is during the swapping of the video driver that the blanking occurs. This is considered normal.

As a method for troubleshooting you can prevent the 'software' video driver from being swapped in and force the Power Macintosh 9500 to use the video driver contained on the ROM by holding down the ⌘-**Shift-N-D** keys at startup. You will notice that the video 'blanking' does not occur because the video driver is not being swapped. You can also remove the Graphic Accelerator extension to prevent the video driver from being swapped as well.

This troubleshooting tip can be helpful for a couple of reasons:

- It can be used to demonstrate that the video driver is actually being swapped because it does not 'blink' when the video driver on ROM is used.
- If the 'software' video driver is corrupt for some reason you can revert back to the video driver in ROM to determine where the problem might be (that is, it can be corrupt software or a bad card).

Important: Since the video driver in the "Graphic Accelerator" extension contains a newer video driver, you should bypass this video driver for troubleshooting purposes only. Running the system off of the ROM based video driver continually may produce unpredictable results.
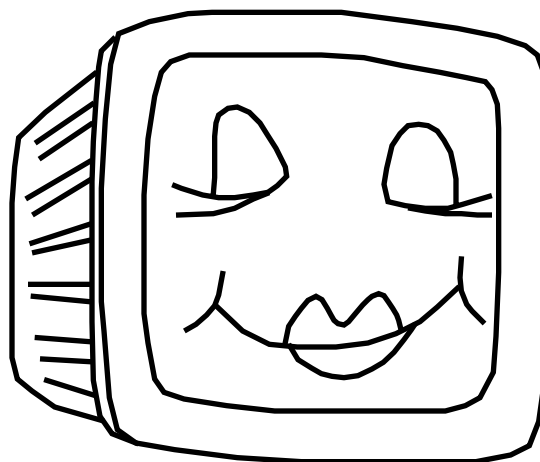
Tips and Tidbits

S.C.OUT Computer Game (by Inline Design)

Type **NOWALLS** at any password prompt. You are told that the password is incorrect, but when you do enter the correct password your spaceship is no longer bound by any wall. You can pass from section to section as if the walls were not there. [From the ***Games Easter Eggs*** file.]

Energy Saving Control Panels

By Michael Bluejay and Brian Fant

There are four different energy-related control panels in System 7.5.

- Auto Power On/Off
- CPU Energy Saver
- Energy Saver
- Screen

The first two control panels shut the COMPUTER off, and the second two put the MONITOR into a sleep state. All four control panels only work on certain Macintosh computers. In addition, the Energy Saver control panel requires an Energy Star-compliant monitor as well as a Macintosh computer compatible with this software. See the chart at the end of this article for a list of compatible systems.

Auto Power On/Off

This feature lets you set your Macintosh computer to power ON and OFF at a pre-determined time, on a daily basis, or for one particular day. It also has a check box labelled **Automatically restart after power failure**. If you check this box and the power goes off, the computer automatically restarts. You can use the Auto Power On/Off feature in conjunction with other System 7.5 features. For example, you could set your system to power on at night and run an AppleScript that re-indexes all of your database files or backs up your hard drive.

This control panel can only be used on computers that can be turned off by using the **Shut Down** command (soft power off) and that have the "Cuda" ADB controller chip. The chart at the end of this article lists the Macintosh models this control panel is compatible with.

Note: Not included with all system software prior to System 7.5

CPU Energy Saver

This feature lets you set your Macintosh to turn OFF at a specified time. However, you cannot set your system to turn ON with this feature. It can only be used on computers that can be turned off by using the **Shut Down** command (soft power off), such as the Quadra 700. This feature is only installed by System 7.5 if Auto Power On/Off is NOT compatible with the Macintosh and CPU Energy Saver IS compatible with the Macintosh.

Note: This control panel did not ship with system software older than System 7.5, although it was released separately before System 7.5.

Energy Saver

This feature lets you set your Macintosh to put external monitors into sleep mode. It was originally designed to work with the built-in video of Macintosh LC III, Quadra 610-950, Power Macintosh, and Performa 450-467, 63x, 611x.

This feature requires an Energy Star-compliant monitor. Compliant models include:

- Apple Color Plus 14-in. Display
- Macintosh Color Display (newer M1198LL/B version)
- Apple AudioVision 14 Display
- Apple Multiple Scan 15, 17, and 20 Displays

Note: Not included with system software prior to System 7.5, although it was made available separately.

This feature did not come preinstalled on some Performa 630- and 6110-series systems and was not included on the backup CDs that shipped with these systems. Customers who want the Energy Saver software can copy it from the disk that comes with the Multiple Scan 15 Display. (Be sure not to copy the Display Enabler extension, since the Performa 630- and 6110-series systems have the Display Enabler's functionality built into the hardware.)

If Energy Saver is installed on a computer that has an incompatible monitor, the monitor goes black after the specified inactivity period has passed, but the incompatible monitor is NOT in low power mode, and therefore is NOT saving energy. Monitors that do not support this Energy Saver function, or monitors that use video cards, are not harmed by the installation of this control panel, but they do not save energy with Energy Saver installed.

The Energy Saver control panel has a slider bar to adjust the monitor inactivity period, from 15 to 60 minutes. Energy Saver can be turned on by clicking the check box nearest the slider bar. The settings take effect immediately; you do not need to restart the computer.

When the Apple Energy Star-compliant monitor has been inactive (that is, you have not used the mouse or keyboard) for the time specified in the Energy Saver control panel, the screen of the monitor goes black. This indicates that the monitor is in low-power mode, and is saving energy. The computer is still functioning.

The monitor returns to a fully active state approximately 20 seconds after you use the keyboard or mouse. You hear a number of beeps while the screen is updated to reflect its current state. (The beep volume cannot be adjusted; it is independent of all system sound controls.)

Screen

This control panel lets you set your Macintosh computer to put internal monitors into sleep mode.

The Screen control panel can only be used on certain "all-in-one" Macintosh systems, such as the LC/Performa 500-series.

This feature shipped with some Performa 630-series systems and appears to work, but does not really save energy. The Screen control panel should be removed from these systems. Use the Energy Saver control panel in its place.

When to Use Which Energy-Saving Control Panels

Key: YES = preferred
OK = compatible, but not preferred
NO = incompatible

System	For Monitors		For Computers	
	Energy Saver	**Screen**	**Auto Power On/Off**	**CPU Energy Saver**
COMPACT MACINTOSH SYSTEMS				
Macintosh 128K, 512K, 512Ke, XL	NO	NO	NO	NO
Macintosh Plus, SE, SE/30	NO	NO	NO	NO
Classic, Classic II, Performa 200	NO	NO	NO	NO
Color Classic, Color Classic II	NO	YES	YES	OK
MACINTOSH II SYSTEMS				
Macintosh II, IIx, IIfx	YES	NO	NO	YES
Macintosh IIcx, IIci	YES	NO	NO	YES
Macintosh IIsi, IIvi, IIvx	YES	NO	YES	OK
MACINTOSH LC SYSTEMS				
Macintosh LC, LC II, LC 475	NO	NO	NO	NO
Macintosh LC III	YES	NO	NO	NO
Macintosh LC 520, 550, 575, 580	NO	YES	YES	OK
Macintosh LC 630	YES	NO	YES	OK
MACINTOSH CENTRIS & QUADRA SYSTEMS				
Macintosh Quadra 605	NO	NO	NO	NO
Macintosh Centris/Quadra 610	YES	NO	NO	NO
Macintosh Quadra 630	YES	NO	YES	OK
Macintosh Centris/Quadra 650	YES	NO	NO	YES
Macintosh Centris/Quadra 660AV	YES	NO	NO	NO
Macintosh Quadra 700	NO	NO	NO	YES
Macintosh Quadra 800, 840AV, 950	YES	NO	YES	OK
Macintosh Quadra 900	NO	NO	YES	OK

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System (continued)	For Monitors		For Computers	
	Energy Saver	Screen	Auto Power On/Off	CPU Energy Saver
MACINTOSH PERFORMA SYSTEMS				
Performa 200	NO	NO	NO	NO
Performa 250, 275	NO	YES	YES	OK
Performa 400, 405, 420, 430	NO	NO	NO	NO
Performa 450, 460, 466, 467	YES	NO	NO	NO
Performa 475, 476	NO	NO	NO	NO
Performa 520, 550, 560	NO	YES	YES	OK
Performa 570-, 580-series	NO	YES	YES	OK
Performa 600	YES	NO	YES	OK
Performa 620-, 640-series	YES	NO	YES	OK
Performa 5200-series	NO	YES	YES	OK
Performa 6200-series	YES	NO	YES	OK
POWER MACINTOSH SYSTEMS				
Power Macintosh 5200/75 LC	NO	YES	YES	OK
Power Macintosh 6100/60, 6100/66	YES	NO	NO	NO
Power Macintosh 6200/75	YES	NO	YES	OK
Power Macintosh 7100/66	YES	NO	YES	OK
Power Macintosh 7100/80	YES	NO	YES	NO[1]
Power Macintosh 8100/80	YES	NO	YES	OK
Power Macintosh 8100/80	YES	NO	YES	NO[1]
Power Macintosh 9500-series	NO	NO	NO	OK

Note: [1] These Power Macintosh computers included the Connectix Desktop Utility (CDU) software. The CPU Energy Saver was not enabled for these machines. The Connectix Desktop Utility makes these units Energy Star Compliant.

### Tips and Tidbits

Open the Sound control panel. Hold down the **Option** key and select **Sound Input**, **Sound Output**, or **Volumes** from the **Alert Sounds** menu. The system growls at you. [From Jeff King, Apple Assistance Center.]

Starting Your Performa from a CD-ROM Disc

By Robert Dorsett

There are times when you may need to start your computer off a volume other than your hard drive. If you did not receive a floppy disk with your Performa, here are ways to startup off the Performa CD that comes with your compuer.
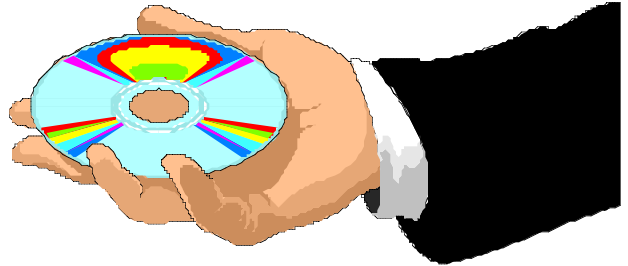
In addition to containing conventional disk diagnostic software, it also contains a complete backup of your system software.

With Your Computer Turned On

Follow these steps to start your Performa 6100 series computer from your startup CD:

STEP	ACTION
1	Insert the CD-ROM disc.
2	Under the Special menu, choose **Restart**.
3	Hold down the **c** (lower-case C) key until you see Welcome to Macintosh.

With Your Macintosh Turned On

Follow the steps in either **Method 1** or **Method 2** to start any CD-ROM equipped Macintosh computer from your startup CD:

Method 1

STEP	ACTION
1	Insert the CD-ROM disc.
2	Under the Apple menu, choose **Control Panels**.
3	Double click on Startup Disk control panel.
4	In the Startup Disk control panel, click on the CD-ROM icon to highlight it.
5	Close the Startup Disk control panel and restart your Macintosh.

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Method 2

STEP	ACTION
1	Insert the CD-ROM disc.
2	Under Special, choose **Restart**.
3	Immediately hold down the **Shift-Option-⌘-Delete** keys.
4	Continue holding these four keys until you see the Welcome to Macintosh screen.

The first device mounted on your desktop beneath the Application menu is the device that your computer used to startup.

Using the Chinese Language Kit on a Power Macintosh 9500 Series Computer

By Daniel Carr

WorldScript Updater 1.0 must first be installed for the Chinese Language Kit to work on the Macintosh Power Macintosh 9500 series computers.

Installation Steps

You must perform the installation in the following order:

STEP	ACTION
1	Install WorldScript Updater 1.0
2	Install Chinese Language Kit 1.1
3	Install Chinese Language Kit Updater 1.1.1

If you install WorldScript Update 1.0 last, your System file could end up being corrupted. If this occurs, you need to perform a "clean install" of the System Software, then reinstall the preceding items in that order.

Additional Information

Refer to the article titled **System 7.5 Clean Install** in the *Information Alley* Volume I, Issue 18, Page 8 or the Tech Info Library article titled **System 7.5: Clean Install Procedure** for clean install instructions.
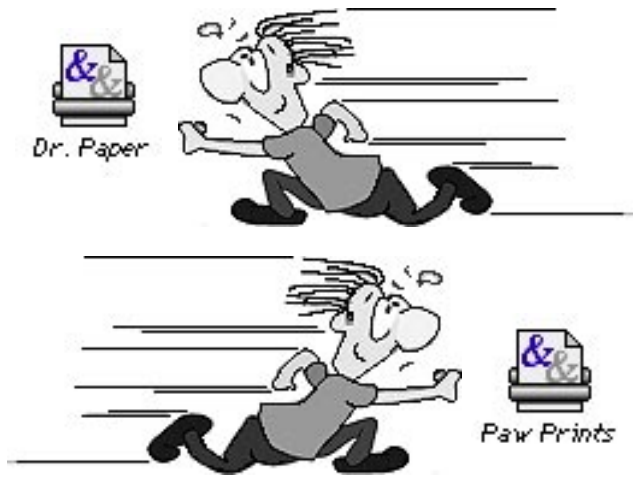
QuickDraw GX 1.1.2 – Desktop Printer Icons Do Not Stay Put

By Denny Carag

The latest QuickDraw GX 1.1.2 does not retain the positions of the desktop printer icons on the Finder. This is a known problem with QuickDraw GX 1.1.2, and will be fixed in the next major release of QuickDraw GX.

Workaround

Fortunately, there is a quick workaround for this problem. Follow these steps:

STEP	ACTION
1	Startup with Extensions off.
2	Move the desktop printer icons to where you want them on the desktop.
3	Restart.

The desktop printers should remain where you have placed them.

Printing White Text on Black from HyperCard in QuickDraw GX

By Doug Korns

If you try to print a HyperCard card with white text on a black background to a printer using a QuickDraw GX driver, the printed card comes out all black with no text shown. If you select some other fill pattern, the outline of the text shows but the fill pattern is inside the character outlines.

This is the correct behavior when using a QuickDraw GX driver. HyperCard is using black & white QuickDraw, which does not let the background pattern show through. The non-GX LaserWriter drivers also use the black & white QuickDraw. QuickDraw GX, however, uses the Color QuickDraw model, which lets the patterns behind outlined text show through. If you print your card with the non-GX StyleWriter and LaserWriter 300 drivers, while set to grayscale, they give you the same result as QuickDraw GX drivers because of Color QuickDraw.

The workaround is to use the non-GX print drivers. Another alternative is to use the QuickDraw GX Helper to turn off desktop printing for the application during this print operation.

Disk/Disk or Directory/Directory Copy Between AWS 95 and A/UX

By Antonio Ordonez

This article describes how to copy all the files in the root (**/**) partition between an Apple Workgroup Server 95 and A/UX, without loosing access privileges and without having to recreate the **/dev** directory. The following commands create a duplicate of the directory structure of the source drive onto the target drive. You can also use this command sequence to copy a directory tree from one directory to another.

To Copy The Complete Contents Of A Partition

Complete the steps in the following table while logged in as **root**:

STEP	ACTION
1	Mount the partition you want to copy to (target) on **/mnt:** mount /dev/dsk/c5d0s0 /mnt **NOTE:** Replace SCSI ID and partition as appropriate
2	Go to the **/** directory: cd /
3	Perform the copy preventing the copy from becoming recursive and without overwriting the **lost+found** directory in the target partition: find . -print | grep -v /mnt | grep -v /lost+found | cpio -pdlmuv /mnt
4	Create the mnt directory in **/mnt**: mkdir /mnt/mnt chmod 777 /mnt
5	Unmount the target disk and perform an **fsck**: umount /mnt fsck /dev/dsk/c5d0s0

Now you have a copy of the source drive, complete with the **/dev** directory.

To Create A Duplicate Copy Of A Directory Structure

STEP	ACTION
1	Go to the directory containing the source directory to be copied: cd /a_directory
2	Perform the copy of the **source_dir** to the directory where you want the **source_dir** structure to be moved to: find source_dir -print | cpio -pdlmuv /target_dir

This results in a directory called **source_dir** inside of **target_dir**. 🍎

Apple Open Transport

By Fred Widmer

Open Transport provides individual computer users with many benefits. Two of the most visible and important benefits relate to making networking more accessible:

- Ease of Switching Network Configurations

  Open Transport makes it easy to switch from one network configuration to another. A computer user "on the go" might want to connect to the Internet in various locations, each requiring a different network configuration. With Open Transport, settings for each network location can be stored for easy access and use. Changed settings are available immediately – no restart of the computer is required to use the new configuration.

- Integrated Online Help

  Open Transport integrates online help, based on Apple Guide technology, to make it easier for an individual to connect to a network, with fewer demands on network manager and support resources.

Open Transport provides significant new flexibility in setting up network configurations. A network manager can recommend or require configuration settings for users on the network, or allow users to determine their own settings.

Open Transport also improves support for centralized configuration management. For example, Open Transport/TCP supports the Dynamic Host Configuration Protocol (DHCP), letting network managers administer addressing and other TCP/IP configuration information from a central server.

Open Transport makes it easier and more cost-effective to develop Macintosh-based applications for a wide variety of customers. With Open Transport, the Mac OS has built-in networking and communications based on cross-platform industry standards, including the POSIX compliant X/Open Transport Interface (XTI), Unix STREAMs and Data Link Provider Interface (DLPI). Applications written to support Open Transport can directly support a wide range of networking environments (serial, dial-up network, LAN, and WAN), and multiple protocols (AppleTalk, TCP/IP, serial, and others) from a common code base.

Questions and Answers About Performance

Q: Is Open Transport native on Power Macintosh? Does this make networking faster?

A: Open Transport is written to take advantage of the PowerPC processor – it is native code. This provides the necessary foundation for increased networking performance in the Mac OS. To realize performance gains, however, it is equally important that networking applications also be accelerated for Power Macintosh, and that applications adopt the new Open Transport XTI-based programming interfaces.

The built-in "backward compatibility" support for existing AppleTalk and TCP/IP applications continues, for technical reasons, to run as 680x0 code in emulation on Power Macintosh. This protects a customer's investment in networking applications, but also obscures underlying performance increases from the native protocol implementations.

Q: When will new or updated applications that support the native Open Transport APIs become available?

A: Some new applications and updated versions of existing applications are native and use Open Transport now. More will be shipping this year. Contact the specific third-party vendor for more details on their product release plans.

Q: How much faster will native Open Transport applications be?

A: Networking performance is influenced by many factors. Customers will see the highest performance networking when using Power Macintosh native applications that fully support Open Transport APIs. Performance will be greater with protocols that use larger datagram sizes—such as TCP/IP—than with AppleTalk (which has a fixed and limited datagram size). On high-speed datalinks (such as fast Ethernet, FDDI, and ATM), the performance of the network interface card (NIC) driver code is also a significant factor. Comparative shopping for NICs – based on price, service, reliability, and performance – will be in order.

Open Transport v1.0 - running on the built-in Ethernet of the Power Macintosh 9500 – has been clocked at 9,300 Kbps throughput using low-level TCP/IP benchmarks. A pre-release version of a third party Open Transport-native implementation of **'nfs'** protocols was benchmarked at 8,400 Kbps. Both figures approach theoretical maximum performance for 10 Mbps Ethernet. AppleTalk performance is somewhat lower, with low-level benchmarking coming in at a bit over 7,500 Kbps throughput.

Q: Does the new native code include Ethernet drivers for Macintosh onboard Ethernet adapters?

A: The Power Macintosh 9500 ships with a new native DLPI Ethernet driver for built-in Ethernet. Future PCI bus Macintosh computers also include native Ethernet drivers. Power Macintosh 61xx/71xx/81xx models currently have 680x0-based drivers; these should be updated to native drivers in the first half of 1996.

Q: What about high-speed networking connections like fast Ethernet, ATM, and FDDI?

A: The Open Transport engineering team is working with NIC developers to create high-performance DLPI drivers for high-speed datalinks. This is a cooperative effort, with some work remaining on both driver code and on Open Transport. We expect that high-speed datalink NIC drivers based on Open Transport v1.1 will be fully competitive with other PCI networking products. Of course, performance tuning will be an ongoing priority, as Apple intends to always offer a platform capable of industry leading network performance.

Q: Will developers ship NICs for fast Ethernet, FDDI, or ATM based on Open Transport v1.0, or will they wait for the performance tuning planned for v1.1?

A: Each developer will make an independent decision to bring their product to market at such time as they are satisfied with the combined performance and reliability of their product with Open Transport.

AppleShare 4.1 Update Kit Information

By Terrie Beloin

AppleShare 4.1 is the latest release of AppleShare for the Mac OS. It is also the fastest AppleShare ever. While AppleShare 4.1 is not PowerPC native, it is tuned to run on PowerPC-based systems and will not install or run on 68K-based Macintosh computers.

AppleShare 4.1 runs, on average, 75% faster than AppleShare 4.0.2 on a similarly configured Power Macintosh or Workgroup Server. All performance data for AppleShare 4.1 is based on a set of internal benchmarks performed by Apple. These benchmarks consist of a variety of Finder copy operations under varying server load conditions.

AppleShare 4.1 requires System 7.5 on the server to run and requires System 7.5 and the new AppleShare Workstation 3.6 (included with AppleShare 4.1) on the client systems to achieve the performance gains detailed above. However, AppleShare 4.1 is compatible with older versions of the AppleShare Workstation software and AppleShare Workstation 3.6 is compatible with older versions of the AppleShare server software.

How to Order the AppleShare 4.1 Update Kit

Customers in the U.S. wanting to upgrade from AppleShare 4.0, 4.0.1 or 4.0.2 to AppleShare 4.1 need to obtain the AppleShare 4.1 Update Kit (proof of 4.0.x purchase is required). The update can be obtained by calling the Apple Order Center at 1-800-769-2775 x7851. This program began April 24, 1995 and ends December 29, 1995. Orders must be postmarked by December 29, 1995.

- Customers running AppleShare 4.0.2 on a PowerPC-based Workgroup Server (6150, 8150, or 9150) will receive the AppleShare 4.1 Update Kit for a $15 shipping/handling charge only. These customers will also receive the Workgroup Server Software Update Kit containing System 7.5.1 for Workgroup Servers and Apple RAID 1.0.2.

- Customers running AppleShare 4.0, 4.0.1 or 4.0.2 on a 68040 or Power Macintosh will receive the AppleShare 4.1 Update Kit for $199 + $15 shipping/handling.

The AppleShare 4.1 Update Kit contains the complete AppleShare 4.1 software but no serial number. Customers must use their existing AppleShare 4.0.x serial number to activate the server. The AppleShare 4.1 Update Kit will be included with the Workgroup Server 8150/110 and 9150/120 Logic Board Upgrades.

Outside the U.S., customers should contact their local Apple reseller or representative for information on upgrading to AppleShare 4.1 in their local language.

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AppleShare 4.0.2 and 3.0.1 Continued Availability

Customers wanting to repurpose an existing Quadra (or other 68040-based Macintosh) as an AppleShare server can do so by purchasing AppleShare 4.0.2 from their Apple Reseller. AppleShare 4.0.2 is designed for 68040-based Macintosh computers only and will not install or run on PowerPC-based systems. AppleShare 3.0.1 continues to be available for Macintosh computers with a 68030 or earlier processor.

For more information on AppleShare and Workgroup Servers, customers can contact the Apple Network Information Hotline at 408/862-3385 or send email to:

abs.netinfo@applelink.apple.com.

World Wide Web access is available at:

http://abs.apple.com

Slow External Mouse on a PowerBook 500 Series Computer

By David Lake

This article describes what is happening when you connect an external mouse to a PowerBook 540c and the mouse tracks slowly (even if the Mouse control panel is set to Fast).

It is very important that you do not plug the mouse into the ADB port when the computer is "powered on". This may damage the ADB port or mouse. However, it is safe to plug in the ADB device when the Macintosh PowerBook 540c is in the sleep mode.

Plugging in a mouse device on any Macintosh computer while the unit is powered on can result in slow mouse (cursor) movement and possible damage to the ADB port. In addition, the Macintosh PowerBook 500 series computers have two control panels influencing the speed of movement of the cursor: the Trackpad and Mouse. Their settings are related to each other. When you make a change in the Trackpad control panel, the Mouse control Panel also changes.

Check to make sure the Trackpad and Mouse control panels are set to the same speed. Open the Mouse control panel and click on the speed you want, even if the speed is already selected. By clicking on the speed you will be sure to save that setting. Do the same for the Trackpad control panel.

Apple LaserWriters – Screen Frequency and Gray Levels

By Darron Spohn

This article discusses customizing printer halftones, screen frequency, and gray levels for optimum output.

Determining the optimal relationship between gray levels and screen frequency is quite simple once you understand a few basic concepts of laser printers. Like computers, laser printers understand only two values: on and off (black and white). They simulate grays by varying the amount of dots within a certain area, called a halftone grid. Halftones are made of grids, just like the paper used to graph functions in trigonometry. To create a halftone, laser printers place dots within each cell on the grid. The screen frequency (which is a misnomer these days, but we still use the term leading when talking about the space between lines of text) determines the size of each cell in the grid.
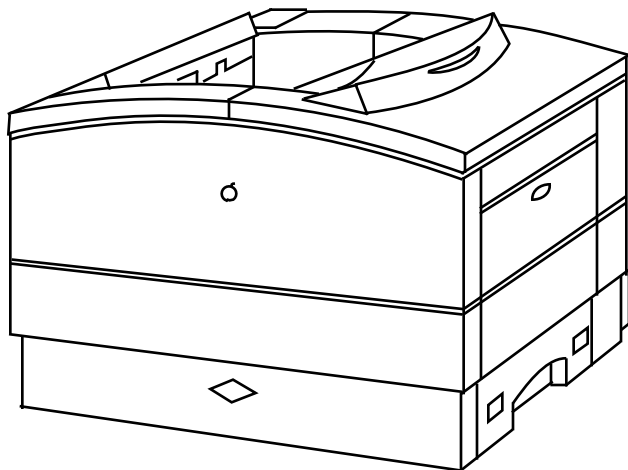
Most laser printers can produce only a given size dot, however Photograde is the exception. Because the dot size is fixed and increasing the line frequency decreases the size of each cell, the gray levels which can be produced are inversely proportional to the line frequency. Visualize a grid and keep in mind only so many dots can be placed on a region of paper. In a 600 dpi printer, such as a LaserWriter Select 360, the dpi does not vary, but you can vary the size of the grid. Because printers produce grays by varying the amount of dots within each halftone cell, making the cells smaller will allow fewer grays in your halftone. The following formula lets you easily determine how many grays you can get for a given resolution and screen frequency with an angle of 0 degrees.

(Output Resolution / Screen Frequency)^2 + 1 = Gray Levels

For example, consider the LaserWriter Select 360.

(600 dots per inch / 100 lines per inch)^2 + 1 = 61 Gray Levels

With a little juggling, you can also use this formula to determine what screen frequency yields a desired level of grays. For a bit easier calculation, simply divide the dots per inch by the square root of the grays levels to determine the screen frequency:

Dots Per Inch times / sqrt(Gray Levels) = Screen Frequency

Staying with the Select 360 example, if you want 100 gray levels:

600 / sqrt(100) = 60

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Again, you can rearrange this formula to calculate different variables. Keep in mind Postscript is limited to 256 shades of gray, so your largest divisor in the preceding formula will be 16. Even for high-end work though, Postscript does an excellent job. Plug a 150 line screen into the formula and you will see you need a 2,400 dpi printer to produce 256 grays.

The discussion above holds true for fixed resolution printers, but Photograde changes the rules by varying the timing of the laser pulses to vary the size of the dots within each cell. The LaserWriter Pro 600/630, Select 300 and IIf/IIg use Photograde technology. Photograde is capable of producing 91 levels of grays using a 106 line screen at 300 dpi. This is sufficient for proofing photographs and low-quality newsletter output.

Also keep in mind 300 dpi and 600 dpi laser printers cannot replace imagesetters or traditional darkroom halftones. Some 1,200 dpi laser printers can produce acceptable halftones for reproducing on newsprint, but users will have to experiment with dot shape and line angle to determine what works best with their particular printer and press. The best solution is to output final copy directly to film on an imagesetter and use laser printers for proofing.

Extra Floppy Disk Shows in the Main Window When Using Disk First Aid

By Joe Azzato and Rick McClain

There have been reports of a problem using Disk First Aid 7.2 after starting up from Disk Tools. When Disk First Aid's main window opens you see the Disk Tools disk on the Internal Floppy Drive, the SCSI ID 0 for the hard drive, and a third floppy disk named "unknown disk".

This issue has been occasionally reported to occur on PowerBooks. You should first make sure you do not have a RAM disk turned on in the memory control panel. To remove the extra floppy icon, you must reset your parameter ram using the following procedure:

STEP	ACTION
1	Restart your computer.
2	After you hear the startup chime hold down the Command, Option, P, and R keys on the keyboard.
3	Continue holding these keys down until you hear a second startup chime.

When you restart with the Disk Tools disk and run Disk First Aid, the extra floppy will be gone.

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